SLO Review cont. (Honors topics)

Name _____ Date _____ Period _____

Solve the following equations.

1. $2(x-1)^{\frac{4}{3}}+4=36$

2. $e^{-2x}+2e^{-x}=3$ (hint: use u-substitution)

3. Find the inverse of the function.

$f(x)=\log(x+4)-7$

4. Use the unit circle to find the exact value of $\sec\frac{5\pi}{4}$.

5. Determine the domain for the rational function.

$f(x)=\frac{x+2}{3x^2-20x-32}$

6. Use symmetry (or even odd properties) to find the exact values of sin Θ and cos Θ for

$\Theta=-\frac{4\pi}{3}$.

7. What are the rectangular coordinates of the polar coordinates $(3, \frac{2\pi}{3})$?

8. Find all polar coordinates for the point $(2, \frac{\pi}{6})$ for $-2\pi \le \Theta \le 2\pi$. (hint there are 3 points)

9. Find the polar equation for the given Cartesian (rectangular) equation $y^2 = 3x$.

10. What is the polar (trig.) form of the complex number $z = 1 - \sqrt{3}\, i$?

11. Find the product of the complex numbers $z_1 = 2(\cos\frac{\pi}{3} + i\sin\frac{\pi}{3})$ *and* $z_2 = 3(\cos\frac{\pi}{4} + i\sin\frac{\pi}{4})$.

12. Each time a ball bounces the height of the ball decreases after each bounce. If a ball is dropped 12 inches from the ground and after the first bounce reaches a height of 11.16 inches, and after each bounce the height decreases by the same percentage, what is the total distance the ball bounces when it comes to rest? (Hint: take into account the ball is going up then down)